

Factors associated with graduating undergraduates' perception of degree value at Ohio State

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Abstract

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Title: Factors associated with graduating undergraduates' perception of degree value at Ohio State

The rising cost of pursuing a college degree and the over \$1 trillion of student loan debt have come to the forefront of conversations surrounding higher education in the United States. Many are assessing if benefits of college outweigh financial costs. At The Ohio State University (OSU) the rising cost of college is of interest due to the university's focus on affordability. What remains unknown is how students at OSU feel about the benefits of receiving an education relative to the costs. The purpose of this study is to examine what drives a graduating undergraduate student at OSU to perceive that the benefits he or she has received from attending OSU were worth the financial costs. This study used secondary data from the 2015-2016 Graduation Survey, a survey administered by the Center for the Study of Student Life at OSU. By using one question from the survey to represent the value of the degree, this study looked at the factors associated with student perceived value of the college degree. Using SPSS to analyze the data, analysis has shown that employed graduating students' satisfaction with one's overall OSU experience, amount of financial borrowing, starting salary, and how well OSU prepared the student for the job market had strong relationships with perceived value of the degree. Demographics, college of enrollment, and whether the students' employment was related to their field of study had weak relationships with perceived value. Discovering the driving factors that contribute to students perceiving the benefits they have received from attending OSU as worth the financial costs will be beneficial to university officials. This information could allow OSU to offer support or services targeted to improve the student experience. Students are making large financial investments into their futures so it is important to understand if they perceive their investment as worth the cost.

Keywords: higher education; degree value; human capital investment

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Introduction

The rising cost of pursuing a college degree and the ever-increasing level of student loan debt have come to the forefront of conversations surrounding higher education in the United States. University and government officials are considering options to control the costs of college and to assess if the benefits of college outweigh the financial costs. At The Ohio State University, the rising cost of college is of particular interest due to the university's current focus on affordability. As part of President Michael V. Drake's 2020 Vision, the university has frozen in-state tuition and mandatory fees since the 2012-2013 academic year, while expanding aid to low and middle-income students (The Ohio State University Office of the President). The purpose of this study is to examine what drives a graduating undergraduate student at The Ohio State University to perceive the benefits he or she has received from attending Ohio State are worth the financial costs to the student and their family.

Factors associated with the perceived value of the college degree are important to study due to the rising net cost of attendance for colleges and the ballooning amount of student loan debt across the nation. Individuals are being more intentional when deciding if pursuing a college degree is worth both the financial costs and opportunity costs. The increasing net cost of attendance has contributed to the rising amount of student loan debt college students are taking on to finance their education. Discovering the driving factors contributing to a student perceiving the benefits they have received from attending Ohio State as worth the financial costs will be beneficial to officials at the university as it could allow them to offer more support or services leading to a better experience for their students. Students are making a large financial investment for their future and knowing if they perceive the investment as worth the price is important.

Literature Reviewed

In making the decision to attend college, individuals often look at the financial factors associated with attending college and the benefit he or she will receive from obtaining a college degree. Often overlooked is the benefit to society that is experienced when members of the population receive a college education. Literature currently exists which examines the financial implications of attending college, the students' evaluation of the worth of their degree, and the overall benefit to society provided by higher education. On a national level, the Federal Reserve Board releases an annual report on the economic well-being of the U.S. population which includes information on higher education and education debt.

a. Federal Reserve Board's Economic Well-Being of U.S. Households Report

The Federal Reserve Board conducts an annual survey of households and releases a report on the economic well-being of the U.S. population. The report summarizes information on higher education, human capital, education debt and student loans. The section on higher education and human capital discusses how different educational characteristics impact the perceived value of higher education. Many of these characteristics revolve around the type of institution attended and these characteristics have a large impact on perceived value. Of the graduates who attended a public or not-for-profit institution, over 60 percent felt they received a net benefit by obtaining a college degree, compared to 32 percent of graduates of for-profit institutions. Another educational characteristic impacting the perceived net benefit of a college degree was the field of study and type of degree pursued. Unsurprisingly, the respondents who had obtained employment were more likely to report feeling as though their education yielded a net benefit. Respondents were also more likely to report their degree yielded a net benefit if their employment was related to their field of study. The survey results reveal that multiple factors

influence whether a respondent feels his/her education yielded a net benefit. Factors include employment status, if ones' employment was within their field of study, area of degree, completion of the degree, type of institution attended, and selectivity of the institution.

The education debt and student loan section of the report considers how respondents financed their education and the characteristics of borrowers. The results indicate that it is common for people to acquire some debt to finance their education, with over half of the respondents having acquired debt while obtaining a bachelor's degree. The mean level of education debt in the United States was \$30,156 and the median level of education debt was \$12,000 for those who completed a bachelor's degree or less. The discrepancy between the mean and median level of education debt is due to the few respondents who carried extremely large amounts of debt. The increasing amounts of education debt have led to 39 percent of respondents with outstanding student loan debt being in deferment. Different forms of debt were incurred by respondents while completing a degree including student loans, education-related credit card debt, or a home equity loan or line of credit to finance ones' education. These various forms of education debt are held not only by persons who received the education but also by spouses, parents, and grandparents.

The survey also documents an inverse relationship between the level of education obtained and the probability of falling behind on student loan repayments, meaning those with higher levels of education are less likely to fall behind on their debt payments. Another finding reveals respondents who attended a for-profit institution were more likely to fall behind on their debt repayments than those respondents who attended public or nonprofit schools. The report concludes first-generation college students are more likely to fall behind on debt repayments than those students with at least one parent who completed at least a bachelor's degree. Black

and Hispanic borrowers are more likely to be behind on their debt repayments than white borrowers. These findings shine a light on the greater burden student loan debt places on certain demographic groups (Larrimore, Dodini, & Thomas, 2015).

b. Financial Evaluation

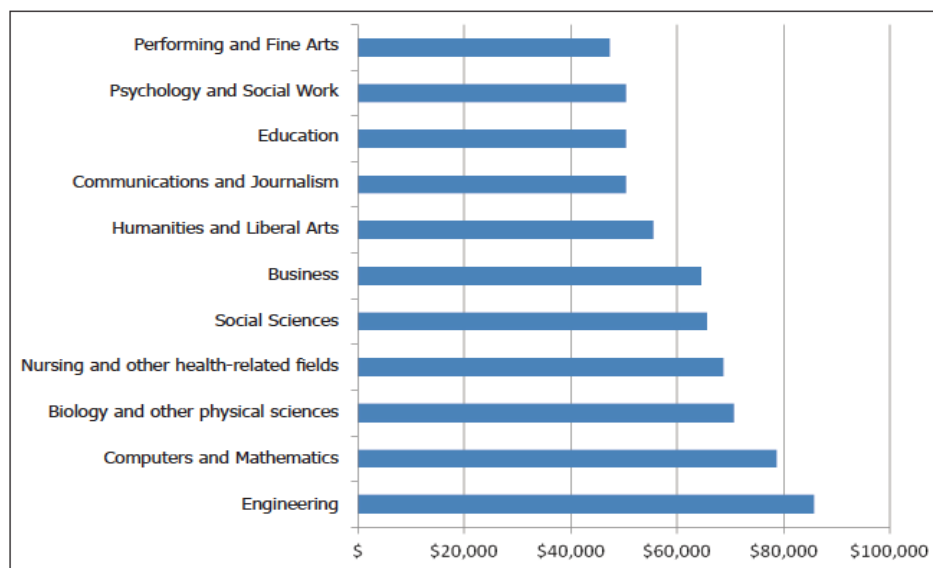
One cannot look at the overall impact of a college degree without evaluating both the benefits and the financial costs associated with pursuing higher education. The average tuition and fees in the 2015-2016 academic year at a four-year, in-state public institution was \$7,350, compared to a four-year private institution at \$30,521 (Ma, Baum, Pender, & Bell, 2015). As of March 31, 2016, the amount of outstanding student loan balances in the United States was up to \$1.26 trillion (*Quarterly Report*. May 2016.).

With the estimated amount of total student debt in the United States exceeding \$1 trillion, there have been concerns about the student loan bubble bursting like the housing market bubble did in 2008. While this seems to be a concerning number, borrowing money for a college education can be viewed as an investment in one's future in which they could see earnings throughout their lifetime of \$1 million more than those with only a high school diploma (Carnevale & Rose, 2011). Furthermore, Rose (2013) found that 35 percent of college graduates owe nothing at the time of their graduation.

With the cost of higher education increasing and the expanding level of debt students take on to finance that education, research has examined factors that affect students' major choice. Research has found that expected earnings and perceived earning ability impact major choice, but financial factors are not the main driver in the choice of major (Wiswall & Zafar, 2015). A financial factor that does impact major choice is the student's family's income level. There is some evidence that students from wealthier families are more likely to study history, English,

and the performing arts, while students from lower-income families are more likely to choose more pragmatic majors like computer science, math, and physics. The difference in lifetime earnings between majors can be more than \$3 million and students from low-income families are more likely to consider earnings potential when choosing their major (Pinsker, 2015). Table 1 below shows the earnings of full time employees mid-career and how their earnings vary by major. This table illustrates that major choice does have a long-term financial impact on college graduates.

Table 1- Earnings by BA Major in 2011



Source: American Community Survey. These data are based on 25- to 65- year-old workers working full-time/full-year and includes those who went to graduate/professional school (potentially in another field). Table taken from Rose (2013).

c. Student Evaluation

When a student decides to pursue and pay for a college education they are expecting to receive a return on their investment in their education. Considerable research has examined how people view receiving a college education. Many view a college degree as an investment due to

the fact that an initial investment is made in an education in hopes of receiving a stream of dividend payments from a salary or income in the future (Saks & Shore, 2005). As with any kind of an investment there are associated risks.

Recently research has focused on financial distress and the impact of financial distress on the future success of students because of the skyrocketing costs associated with receiving a college education. Financial distress often comes from students taking on massive amounts of student loan debt without knowing how or when they will be able to repay the debt. Student loans have been found to be a larger source of financial anxiety than other types of debt including credit cards, and automobile loans (Archuleta, Dale, & Spann, 2013; Heckman, Lim, & Montalto, 2014). Other research has investigated the impact of self-efficacy and financial literacy on how a student experiences and deals with financial distress. The research showed how beneficial it is for students to take advantage of financial resources available to them and have high self-efficacy, especially due to the rising cost of a college education and increasing rates of student loan debt (Lim, Heckman, Letkiewicz, & Montalto, 2015).

d. Benefit to Society

The benefits of a college education are not just bestowed on those individuals who receive the degree, society benefits from having an educated workforce. Carnevale and Rose (2011) considered how the United States' gross domestic product (GDP) would be impacted by having an additional 20 million people attend some postsecondary school. Their findings showed that this influx of people with postsecondary education would increase the United States' GDP by \$500 billion. The nation's GDP is not the only thing that would benefit, wage inequality would also decrease by 40 percent (Carnevale and Rose, 2011).

Economic factors are but one way society benefits from having more college graduates. Society also benefits by having these graduates who are more likely to practice active citizenship and be engaged in society. Bynner, Dolton, Feinstein, Makepeace, Malmberg, and Woods (2003) found that those who pursued more education had higher racial tolerance, were more engaged in their communities, and were not as politically cynical. Bynner and colleagues (2003) also found that college graduates completed the most volunteer and charity work in their communities.

Hypothesis

The exploration of the factors associated with graduating undergraduate's perception of degree value is guided by a set of hypotheses.

a. **Demographics**

H₁: Demographic factors including sex and ethnicity are associated with student perceived value of the college degree.

b. **College of Enrollment**

H₂: The college of enrollment of the graduating student is associated with student perceived value of the college degree.

c. **Satisfaction**

H₃: Overall satisfaction as a student at Ohio State is associated with student perceived value of the college degree.

d. **Financial Borrowing**

H₄: The total amount borrowed to finance one's undergraduate education is associated with student perceived value of the college degree.

e. **Future Plans**

H₅: One's principal activity upon graduation is associated with student perceived value of the college degree.

f. **Future Employment**

H₆: Whether or not the prospective position one has received is related to his or her undergraduate field of study is associated with student perceived value of the college degree.

H₇: The graduating student's starting salary is associated with student perceived value of

the college degree.

H₈: The perception that Ohio State has provided good job market preparation is associated with student perceived value of the college degree.

Research Methods

This study used data collected through the Graduation Survey that the Center for the Study of Student Life (CSSL), a part of the Office of Student Life at The Ohio State University, collects annually. The Graduation Survey collects data in many areas including demographics, graduates' satisfaction with Ohio State, debt, post-graduation plans, employment plans, future education, curricular experiences and entrepreneurship. The survey is "sent to all undergraduate, Master's, and professional degree recipients who were scheduled to graduate in the summer, autumn, or spring terms" of the corresponding academic year (*Graduation Survey*, 2016) through a link sent in an email from CSSL. See Appendix A to view the survey. Due to Institutional Review Board restrictions, data from potentially identifying questions was withheld from this study's use.

This study focuses on how undergraduate students graduating during the 2015-2016 academic year from The Ohio State University responded to the Graduation Survey. The specific question of interest is Q1.16, which asks, "Reflecting back, do you now think that the benefits you have received from attending Ohio State were worth the financial costs to you and your family?" (*Graduation Survey*, 2016). This concept will be referred to as the perceived value of the degree. This study looks at factors that are associated with student perceived value of the college degree. Due to the branching nature of the survey, this study looks at the overall sample of undergraduates and then narrows its focus to look at the subsample of students who have selected employment (full or part-time) as their principal activity upon graduation and then again narrows to focus on the subsample of students who provided starting salary information. By narrowing the focus to the subsample of employed students more data can be used due to the increased number of survey questions that were asked specifically of this subsample.

Data Analysis

a. Entire Population

The data from the 2015-2016 academic year Graduation Survey was analyzed using SPSS Statistics software. First, observations with missing responses for perceived value of degree, which included participants who saw and did not answer the question and participants who did not progress far enough in the survey to reach the given question, were removed from the dataset. Their removal was necessary because perceived value of degree was the question of interest and without a response to this question their data was not informative for this study. This resulted in a sample of 4,388 students. Table 2 shows the breakdown of the demographics for this population.

Answers to the perceived value of degree were grouped into three categories from the initial five responses to create more equal sized groups. The responses strongly agree and somewhat agree were left as separate categories. The responses neither agree nor disagree (neutral), somewhat disagree, and strongly disagree were combined into one category. Other questions' responses were grouped to create large enough cell sizes to be able to analyze the data. Please refer to Appendix B to see the groupings of responses for questions that were recoded.

Chi Square tests were used to determine if there were relationships between student perceived value of the college degree and the variables identified in the research hypotheses listed previously. Cramer's V was used to test the strength of the relationship. The results can be viewed in Table 3.

b. Employed Population

The sample was narrowed to the population of graduating students that selected employment as their principal activity upon graduation (N= 3,064). This group includes those who had already found employment and those who were still searching for employment upon graduation. These students were asked questions about their employment that could potentially impact the perception of the value of the degree. The demographics of the employed population were compared to the demographics of the entire population (see Table 2). The employed population had a similar race distribution but included a higher percentage of male respondents, a lower percentage of respondents from the Arts and Sciences and a higher percentage of respondents from Business and Engineering compared to the total population.

Chi Square tests were used to determine if there were relationships between students' perceived value of the degree and the variables identified in the research hypotheses (see Table 3).

c. Employed Population with Starting Salary Information

The sample was narrowed to the subset of the population that had responded that employment was their principal activity upon graduation and that had provided starting salary information. This narrowed the population down to 1,103 students. Table 4 shows how this population's responses to the perceived value of degree varies by gender, ethnicity, college, starting salary, overall satisfaction, amount of financial borrowing, and perceived quality of job preparation. For the total sample, 80.3% of the respondents were satisfied that the benefits of their education outweighed the costs. For the population of employed graduating students with salary data, there was a higher percentage of females (82%); students enrolled in the college of Business (88%), Engineering (82%), and Nursing (87%); students in the 2nd (84%), 3rd (82%), and 4th (84%) salary quartiles; students satisfied with their overall OSU experience (89%);

students who did not borrow any money for their education (85%) and students with financial borrowing for their education between \$1 and \$19,999 (85%); and students who felt the university prepared them for the job market very well (90%), who were satisfied with the perceived value of their degree.

Demographic characteristics of this subsample are provided in Table 2. There were several differences between the employed population and the employed population with salary information. The employed population with salary information includes higher percentages of males, whites, and students enrolled in the colleges of Business and Engineering. There were lower percentages of females, non-resident aliens, and students enrolled in the colleges of Arts and Sciences, and Education and Human Ecology.

A possible explanation for the differences in college of enrollment is that Business and Engineering students often start the job search process earlier due to the college's career services hosting career fairs in the beginning of the academic year. Many Business and Engineering students complete internships or co-ops and receive and sign full time offers (offers that include a starting salary number) with the company with which they interned. This is a possible explanation for why there are higher percentages of Business and Engineering students with starting salary information. Non-resident alien numbers may be lower in this subset of the data because they may be returning to their country of origin to search for employment.

Multivariate regressions were used to examine the impact a variable had on the perceived value of the degree while controlling for all the other variables known to affect the perceived value of the degree. The multivariate regression allows one to ask if starting salary affects the perceived value of the degree controlling for the impact of overall satisfaction, debt at graduation, and job market preparation.

**Table 2- Comparison of Demographic Information for Subsets of Survey Respondents
(Column Percentages)**

		Entire Population N=4388	Employed Population N=3064	Employed Population with Salary Data N=1103
Gender	Male	47.63%	51.24%	56.94%
	Female	52.37%	48.76%	43.06%
Ethnicity	White	77.87%	79.90%	83.41%
	Black or African American	4.92%	4.96%	4.17%
	Hispanic	3.05%	2.94%	2.45%
	Asian	4.54%	4.08%	3.54%
	Non-Resident Alien	5.45%	3.59%	1.27%
	Two or More Races	2.55%	2.64%	3.63%
	Other	1.62%	1.89%	1.54%
College	UAGR	5.20%	5.45%	6.71%
	UASC	44.96%	39.65%	25.93%
	UBUS	10.87%	13.74%	21.76%
	UEHE	8.77%	9.63%	4.71%
	UENG	16.70%	19.13%	29.28%
	UNUR	2.03%	2.58%	3.54%
	Combined Other	11.46%	9.82%	8.07%

Table 3- Tests of Association with Perceived Value of Degree

		Entire Population N=4388		Employed Population N=3064		Employed Population with Salary Information N=1103	
Question #	Question	Cramer's V	Level of Association	Cramer's V	Level of Association	Cramer's V	Level of Association
	College of Enrollment	.104***	Very Weak	.138***	Weak	.147**	Very Weak
	Sex	.032		.012		.032	
	Ethnicity	.080***	Very Weak	.076**	Very Weak	.080	
Q1.14	Looking back, how satisfied are you with your experience as a student at Ohio State overall?	.344***	Strong	.346***	Strong	.322***	Strong
Q1.15	At the time you graduate, approximately what will be the total amount borrowed to finance your undergraduate education that you are personally responsible for repaying?	.201***	Moderate	.191***	Weak	.207***	Moderate
Q1.19	What is MOST LIKELY to be your principal activity upon graduation?	.104***	Very Weak				
Q1.26	Is your prospective position related to your undergraduate field(s) of study?	.141***	Very Weak	.141***	Very Weak	.103***	Very Weak
Q1.30	What will be your starting yearly salary?					.168***	Weak
Q1.33	How well do you think Ohio State has prepared you for the job market?	.305***	Strong	.305***	Strong	.262***	Moderately Strong

** Indicates a Chi Square value greater than .001

*** Indicates a Chi Square value of equal to or less than .001

Table 4- Distribution of Perceived Value of Degree for Employed Population with Salary Data by Characteristic (N=1103) (Row Percentages)

		Perceived Value of Degree	
		Q1.16=1 Satisfied	Q1.16=0 Unsatisfied
	Entire Population	80.33%	19.67%
Gender	Male	78.98%	21.02%
	Female	82.11%	17.89%
Ethnicity	White	81.09%	18.91%
	Black or African American	80.43%	19.57%
	Hispanic	74.07%	25.93%
	Asian	74.36%	25.64%
	Non-Resident Alien	78.57%	21.43%
	Two or More Races	72.50%	27.50%
	Other	82.35%	17.65%
College	UAGR	68.92%	31.08%
	UASC	76.22%	23.78%
	UBUS	87.50%	12.50%
	UEHE	75.00%	25.00%
	UENG	82.04%	17.96%
	UNUR	87.18%	12.82%
	Other	77.01%	22.99%
Starting Salary	<\$30,001	66.67%	33.33%
	\$30,001-\$50,000	83.88%	16.12%
	\$50,001-\$60,000	81.89%	18.11%
	>\$60,000	84.23%	15.77%
Q1.14	Satisfied	88.58%	11.42%
	Somewhat agree	70.99%	29.01%
	Neutral; Somewhat dissatisfied, Dissatisfied	75.12%	24.88%
Q1.15	\$40,000+	68.07%	31.93%
	\$20,000-\$39,999	76.10%	23.90%
	\$1-\$19,999	84.71%	15.29%
	\$0	85.34%	15.29%
Q1.33	Very well	90.19%	9.81%
	Generally well	81.07%	18.93%
	Neutral; Inadequately; Very inadequately; Not relevant	75.12%	24.88%

Results

With the rising cost of attendance of college and the skyrocketing levels of student loan debt in the United States, it is important for one to assess if the benefits of receiving a college degree outweigh the financial costs. At The Ohio State University affordability is one of the central concerns of the administration. One of OSU's missions therefore is to ensure that receiving an education from the institution is affordable for all students. The Graduation Survey asked students about how they perceived the value of their degree by asking if they felt their degree was worth the financial costs to the student and their family. Correlation analysis of the data from the Graduation Survey showed that starting salary, overall satisfaction, and job market preparation had an impact on perception of degree value for students who were employed and had starting salary information. Employment within one's field of study, demographics, and college of enrollment were not related with the perceived value of the degree.

Table 5 summarizes the results of the multivariate logistic analysis. Table 5 includes the exponentiated coefficient ($\text{Exp}(B)$) and the statistical significance of the estimates. When $\text{Exp}(B)$ is greater than (less than) one the variable is positively (negatively) associated with the likelihood of perceiving that the benefits of the degree outweigh the costs. Model 1 included student's sex, race, and college of enrollment as explanatory variables. Model 2 replicates model 1 and adds information on starting salary. Models 3, 4 and 5 replicate model 2 but add overall satisfaction, amount of financial borrowing, and perceived job market preparation, respectively. Model 6 replicates model 2 and adds both overall satisfaction and perceived job market preparation. Model 7 is the full model. By all three measures of model fit, Model 7 is the best model with the smallest -2 Log likelihood, and the largest Cox & Snell R Square and Nagelkerke R Square.

a. Control Variables

Sex (male) is less than one and statistically significant in Models 2-7. The ethnicity variables are not statistically significant in any of the models. The effect of the college variables differs across the models. The exponentiated coefficient for Agriculture is less than one and statistically significant in Models 5, 6 and 7. The exponentiated coefficients on Business and Engineering are greater than one and statistically significant only in Model 1. Discussion of results for the remaining variables focus on the full model (Model 7).

b. Starting Salary

Students who had a starting salary in the highest salary quartile (greater than \$60,001) were 2.586 times more likely to be satisfied with the value of their degree than those students who had a starting salary in the lowest salary quartile (less than or equal to \$30,000). Students who had a starting salary in the third salary quartile (between \$50,001 and \$60,000) were 1.849 times more likely to be satisfied with the value of their degree than those students who had a starting salary in the lowest salary quartile. Finally, those students who had a starting salary in the second quartile (between \$30,001 and \$50,000) were 2.328 times more likely to be satisfied with the value of their degree than those students who had a starting salary in the lowest salary quartile.

c. Overall Satisfaction

Students who were satisfied with their experience as a student at Ohio State overall were 10.919 times more likely to be satisfied with the value of their degree than those students who were neither satisfied nor dissatisfied, somewhat dissatisfied, or dissatisfied with their experience. Students who were somewhat satisfied with their experience as a student at Ohio State overall were 4.976 times more likely to be satisfied with the value of their degree than

those students who were neither satisfied nor dissatisfied, somewhat dissatisfied, or dissatisfied with their experience.

d. Amount Borrowed

Students who borrowed \$40,000 or more to finance their undergraduate education that they are personally responsible for repaying were .437 times as likely to be satisfied with the value of their degree than those who did not have to borrow any money to finance their undergraduate education. Students who borrowed \$20,000-\$39,999 to finance their undergraduate education that they are personally responsible for repaying were .584 times as likely to be satisfied with the value of their degree than those who did not have to borrow any money to finance their undergraduate education.

e. Job Market Preparation

Students who felt that Ohio State prepared them very well for the job market were 2.452 times more likely to be satisfied with the value of their value than those students who believed Ohio State prepared them neither well nor inadequately (neutral), inadequately, very inadequately or that it was not relevant. Students who felt that Ohio State prepared them generally well for the job market were 4.187 times more likely to be satisfied with the value of their value than those students who believed Ohio State prepared them neither well nor inadequately (neutral), inadequately, very inadequately or that it was not relevant.

Table 5- Multivariate Analysis Results (N=1103)

		Model 1		Model 2		Model 3		Model 4		Model 5		Model 6		Model 7	
		Sex, Race and College		Sex, Race, College and Salary		Sex, Race, College, Salary and Q1.14		Sex, Race, College, Salary and Q1.15		Sex, Race, College, Salary and Q1.33		Sex, Race, College, Salary, Q1.14 and Q1.33		Sex, Race, College, Salary, Q1.14, Q1.33, and Q1.15	
		Exp(B)	Significance	Exp(B)	Significance	Exp(B)	Significance	Exp(B)	Significance	Exp(B)	Significance	Exp(B)	Significance	Exp(B)	Significance
Sex	Female (reference)														
	Male	0.75	0.081	0.664*	0.016	0.68*	0.037	0.676*	0.024	0.671*	0.026	0.678*	0.040	0.685*	0.050
Ethnicity	White (reference)														
	Black or African American	0.948	0.890	0.852	0.684	0.82	0.635	0.909	0.810	0.95	0.904	0.894	0.795	0.986	0.974
	Hispanic	0.758	0.543	0.712	0.462	0.915	0.866	0.629	0.322	0.777	0.596	0.922	0.876	0.768	0.608
	Asian	0.57	0.144	0.528	0.101	0.597	0.221	0.475	0.058	0.566	0.161	0.603	0.235	0.542	0.155
	Non-Resident Alien	0.885	0.854	0.861	0.823	0.772	0.704	0.955	0.947	1.173	0.818	0.924	0.908	1.009	0.990
	Two or More Races	0.581	0.142	0.566	0.129	0.625	0.242	0.599	0.178	0.546	0.121	0.618	0.242	0.668	0.347
College of Enrollment	Other	1.083	0.902	0.904	0.877	0.88	0.853	0.959	0.950	0.802	0.744	0.84	0.809	0.907	0.892
	UASC (reference)														
	UAGR	0.686	0.195	0.603	0.092	0.567	0.076	0.628	0.126	0.477*	0.019	0.484*	0.026	0.497*	0.036
	UBUS	2.231***	0.001	1.655	0.052	1.314	0.326	1.568	0.087	1.145	0.618	1.072	0.808	0.994	0.984
	UEHE	0.875	0.703	0.924	0.827	0.857	0.693	1.131	0.739	0.783	0.523	0.759	0.483	0.919	0.837
	UENG	1.518*	0.045	1.003	0.990	0.971	0.918	1.003	0.992	1.03	0.913	0.997	0.992	1.003	0.991
	UNUR	1.808	0.241	1.182	0.747	1.388	0.578	1.173	0.761	0.926	0.889	1.132	0.837	1.087	0.889
	Combined Other	0.99	0.973	1.09	0.773	1.072	0.831	1.173	0.599	0.847	0.601	0.902	0.759	0.951	0.883
Salary Quartile	<\$30,000 (reference)														
	\$30,001-\$50,000			2.557***	0.000	2.612***	0.000	2.462***	0.000	2.349***	0.000	2.463***	0.000	2.328***	0.001
	\$50,001-\$60,000			2.289**	0.002	2.321**	0.004	2.157**	0.005	1.91*	0.022	2.042*	0.016	1.849*	0.045
	>\$60,000			2.97***	0.000	3.24***	0.000	2.851***	0.001	2.35**	0.005	2.744**	0.002	2.586**	0.004
Q1.14	Satisfied					17.186***	0.000					11.025***	0.000	10.919***	0.000
	Somewhat satisfied					6.076***	0.000					4.872***	0.000	4.976***	0.000
	Neither satisfied nor dissatisfied; Somewhat dissatisfied; Dissatisfied (reference)														
Q1.15	\$40,000+							0.423***	0.000					.437***	0.001
	\$20,000-\$39,999							0.657*	0.043					0.584*	0.019
	\$1-\$19,999							1.115	0.639					1.272	0.355
	None; Unable to Estimate (reference)														
Q1.33	Very well									3.687***	0.000	2.267***	0.000	2.452***	0.000
	Generally well									7.494***	0.000	3.849***	0.000	4.187***	0.000
	Neither agree nor disagree(neutral); Somewhat disagree; Strongly disagree (reference)														
Model Summary	-2 Log likelihood	1066.928		1045.799		917.983		1025.95		966.416		890.527		870.839	
	Cox & Snell R Square	0.024		0.043		0.147		0.060		0.109		0.168		0.183	
	Nagelkerke R Square	0.038		0.068		0.234		0.095		0.173		0.268		0.291	

* p ≤ .05 Significance was determined at the 95% confidence level.

** p ≤ .01

*** p ≤ .001

Implications

The results of this study contribute to our understanding of what drives a graduating undergraduate student at The Ohio State University to perceive the benefits he or she has received from attending Ohio State were worth the financial costs to the student and their family. The results show the perceived value of the degree received from OSU for graduating undergraduates', whose principal activity upon graduation was employment, was impacted by starting salary, overall satisfaction as a student at OSU, the amount of financial borrowing, and job market preparation.

The results indicate President Drake's focus on affordability, through his 2020 Vision, is beneficial for the university as this focus could positively impact a student's perceived value of degree. The findings suggest that the emphasis The Office of Student Life places on creating the extraordinary student experience is not only appropriate, but also important to students being satisfied with the perceived value of their degree from OSU. How satisfied a student was with their overall OSU experience highly impacted how satisfied they were with their perceived degree value. The university should look into what specific factors influence the student experience because there are many different programs and experiences that a student could have during their time at the university that impact the overall student experience. Examples of experiences that impact the overall student experience could include studying abroad, participating in undergraduate research, being an Honors or Scholars student, partaking in an internship, living in a residence hall, or joining a student organization. It would be beneficial for the university to discover which activities have a high impact on overall student experience and invest more time and resources into these experiences, as well as promote them to students.

The results also suggest the university needs to focus not only on affordability and the student experience, but also on preparing graduating undergraduates for the job market if the university wants their students to be satisfied with the perceived value of the degree. The Office of Student Life at OSU has created Buckeye Careers to focus on career development and offers career services for students. Focusing on job market preparation will allow more graduating undergraduates, who plan to enter the labor market directly after graduation, to secure employment before graduation and this could impact their satisfaction with their perceived degree value. Better job market preparation for students entering the labor market directly after graduation could also lead to higher starting salaries. Through this preparation they may learn skills allowing them to negotiate their starting salary or the preparation could lead to students having more than one job offer with different starting salaries. This is important as a student's starting salary had a significant impact on satisfaction with the perceived value of the degree. Students who felt as though a net benefit was received from obtaining a degree from OSU will be more likely to recommend OSU to others, be actively engaged with the university through alumni programs, and donate to the university for years to come.

While completing this study, limitations arose from using secondary data and not having access to all the desired data. The Graduation Survey allowed this study to use preexisting data and it provided data for a large population, but with the convenience of the data came limitations. The survey did not provide information on in-state or out-of-state status, years to complete the degree, age of respondent, scholarships awarded, and financial aid packages. Much of the information that was not provided would have been beneficial for the study but is protected under Family Education Rights and Privacy Act (FERPA) laws. Understandably this information is highly protected for privacy reasons. The survey also worded some of the questions differently

than desired for this study, but overall, the survey collected much of the needed information for this study. For example, the starting salary question allowed respondents to fill in the value. This data had to be cleaned and some assumptions were made when people listed hourly wages or used words instead of numbers. This study was not able to control for the cost of living differences when considering starting salary numbers due to the potential of the city being an identifying question. While these limitations do exist, the study still showed significant relationships between various factors and the satisfaction with the perceived value of the degree.

Interestingly, this study found slightly different results than the Federal Reserve Board's 2015 report on the Economic Well-Being of U.S. Households. The Federal Reserve Board report found factors influencing whether a respondent felt as though their education yielded a net benefit to include employment status, if ones' employment was within their field of study, area of degree, completion of the degree, type of institution attended, and selectivity of the institution (Larrimore, Dodini, & Thomas, 2015). The Federal Reserve Board report discovered many institutional influences that are not in this study which focuses on one institution, OSU, a four-year public institution. The Federal Reserve Board's findings show how the area of degree and if ones' employment is within their field of study impacts the perception of net benefit of obtaining a degree. These factors did not impact the perceived value of degree for the population of graduating undergraduates from OSU. One possible explanation for this difference may be that students at OSU receive a liberal arts education with general education requirements. Some of the respondents in the Federal Reserve Board's study received a specialized education from a for-profit institution, which limits their options to what they can do with their degree. Having a liberal arts education indicates to a potential employer that the candidate has a wide base of knowledge and the candidate did not learn only one specific skill set. This may be why

graduating students' perceived value of the degree from OSU is not impacted by whether their employment is within ones' field of study.

Future Research

Additional valuable information could be gained from analyzing data obtained from the Graduation Survey from previous academic years in order to identify trends. The setup of the survey has changed from years past so careful consideration should be applied when comparing results of the data from year to year. As well as looking at previous data, future research could be done using the data from this current academic year (2016-2017) once the Graduation Survey data is collected and available to be analyzed. Using multiple years' worth of data would allow trends to be discovered and these trends may be extremely instructive in forming a holistic view of what impacts perceived degree value for graduating undergraduate students. Using data from previous and current years would allow one to see if the results are similar to those of the 2015-2016 academic year and what, if any, changes are occurring over time.

Analysis could also be performed on the perception of degree value for the students with post-graduation plans that do not include employment. This group of graduating students includes those who responded that additional schooling, military service, a volunteer activity or starting or raising a family was their principal activity upon graduation. Students who chose a different principal activity upon graduation were asked a set of questions that related to their chosen activity. These additional questions may drive a different result of what impacted perceived degree value for students who did not select employment as their principal activity upon graduation.

Analysis could also be done for graduating professional or graduate students. The Graduation Survey was administered to this population of students with many of the same questions that were found on the undergraduate's Graduation Survey. Looking at employed professional or graduate students, it would be interesting to see if the same results were found

when compared to the employed undergraduate students. Differences in borrowing to fund graduate or professional school and differences in the overall student experience for this group of students could lead to interesting variances in which factors drive satisfaction for the perceived value of degree.

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Appendix A: Ohio State University 2015-2016 Undergraduate Graduation Survey

Q1.1 Graduation Survey

Q1.2 Contact Information

Contact information is shared with the Alumni Affairs office. If you do not wish to have your contact information shared, please do not provide it.

Q1.3 Permanent e-mail address:

Q1.4 Cell phone:

Q1.5 May we send you text messages?

- Yes
- No

Q1.6 Future surface mail address:

Line 1
Line 2
City
State or Province
Postal Code
Country

Q1.7 Which faculty member or university administrator had the most significant influence on you during your student experience?

Q1.8 Please select the ways you would like to be involved with The Ohio State University after you graduate. Please check all that apply.

- Volunteer at Ohio State
- Volunteer in the name of Ohio State in your local community
- Participate in a local Ohio State Alumni Club and/or college or special interest society
- Mentor/speak to current Ohio State students
- Network with other alumni and Ohio State supporters
- Join an Ohio State virtual networking group (e.g., Facebook or LinkedIn)
- Other ideas: _____

Q1.9 Are you an international student?

- Yes
- No
- Prefer not to answer

If No Is Selected, Then Skip To Looking back, how satisfied are you w...If Prefer not to answer Is Selected, Then Skip To Looking back, how satisfied are you w...

Answer If Are you an international student? Yes Is Selected

Q1.10 Are you planning to return to your country of origin immediately upon graduation?

- Yes
- Maybe
- No
- I don't know

Answer If Are you planning to return to your country of origin imme... Maybe Is Selected

Q1.11 Please let us know why you might return.

Q1.12 Are you authorized to work permanently in the U.S.

- Yes
- No

Q1.13 Satisfaction

Q1.14 Looking back, how satisfied are you with your experience as a student at Ohio State overall?

- Dissatisfied
- Somewhat dissatisfied
- Neither satisfied nor dissatisfied
- Somewhat satisfied
- Satisfied

Q1.15 At the time you graduate, approximately what will be the total amount borrowed to finance your undergraduate education that you are personally responsible for repaying?

- None
- \$1 to \$9,999
- \$10,000 to \$19,999
- \$20,000 to \$29,999
- \$30,000 to \$39,999
- \$40,000 to \$49,999
- \$50,000 or more
- Unable to estimate

Q1.16 Reflecting back, do you now think that the benefits you have received from attending Ohio State were worth the financial costs to you and your family?

- Strongly agree
- Somewhat agree
- Neither agree nor disagree (neutral)
- Somewhat disagree
- Strongly disagree

Q1.17 Post-Graduation Plans

Q1.18 Do you plan to stay in the Columbus, Ohio area upon graduation?

- Yes
- No
- I don't know
- Not applicable

Q1.19 What is MOST LIKELY to be your principal activity upon graduation?

- Employment, full-time paid
- Employment, part-time paid
- Graduate or professional school, full-time
- Graduate or professional school, part-time

- Additional undergraduate coursework
- Military service
- Volunteer activity (e.g., Peace Corps)
- Starting or raising a family

If Graduate or professional sc... Is Selected, Then Skip To Future Education Plans For the f...If
 Graduate or professional sc... Is Selected, Then Skip To Future Education Plans For the f...If
 Additional undergraduate co... Is Selected, Then Skip To Future Education Plans For the f...If
 Starting or raising a family Is Selected, Then Skip To Future Education Plans For the f...

Answer If What is MOST LIKELY to be your principal activity upon graduation? Volunteer activity (e.g., Peace Corps) Is Selected

Q1.20 You selected volunteer activity as your principal activity, if you have the following details, please provide them:

Name of the organization:

Location of the assignment (city, state, and country):

Your role or title:

If Name of the organization: Is Displayed, Then Skip To Future Education Plans For the f...

Answer If What is MOST LIKELY to be your principal activity upon graduation? Military service Is Selected

Q1.21 You selected military service as your principal activity, if you have the following details, please provide them:

Service branch of the military

Your rank

If Service branch of the military Is Displayed, Then Skip To Future Education Plans For the f...

Q1.22 Future Career Plans

Q1.23 Which of the following best describes your current state of plans for employment immediately after graduation?

- Have accepted a position
- Have been offered a position or multiple positions, but declined positions and still searching for preferred position
- Considering one or more offers
- Currently searching or waiting on offers
- Will begin searching for a position after graduation

Q1.24 If you have accepted a position, in what type of organization or sector will you work?

- Private for-profit corporation/company/group-practice
- Private non-profit (e.g., school, college, arts/cultural organization)
- Self-employed, own business, or professional practice (non-group)
- Government or other public institution or agency
- Not applicable (have not accepted)

Q1.25 If you have accepted a position, please select the category that BEST describes your future position:

- Employed as an entrepreneur
- Employed in temporary/ contract work assignment
- Employed freelance

- Employed in a postgraduate internship/ fellowship
- Employed in all other work categories
- Not applicable (have not accepted)

Q1.26 Is your prospective position related to your undergraduate field(s) of study?

- Same field as major(s)
- Related to major(s)
- Related to minor(s)
- Not related to major(s) or minor(s)
- Not applicable

Answer If Which of the following best describes your current state of plans for employment immediately after g... Have accepted a position Is Selected

Q1.27 What is the job title of the position that you have secured for after graduation?

Answer If Which of the following best describes your current state of plans for employment immediately after g... Have accepted a position Is Selected

Q1.29 Please indicate the company/institution name

Answer If Which of the following best describes your current state of plans for employment immediately after g... Have accepted a position Is Selected

Q1.30 What will be your starting yearly salary? (In US Dollars, Format: \$25,000)

Answer If Which of the following best describes your current state of plans for employment immediately after g... Have accepted a position Is Selected

Q1.31 What will be your first-year bonus amount, if you will receive one? (In US Dollars, Format: \$25,000)

Answer If Which of the following best describes your current state of plans for employment immediately after g... Have accepted a position Is Selected

Q1.32 Where or how did you find your job? Please select all that apply.

- Career Fair held at Ohio State
- Career Services office at Ohio State (e.g., Buckeye Careers, College-specific career office)
- Company website
- Contact you made on your own
- Contact you made through peer, family, or friend
- Ohio State faculty or staff referral
- Ohio State Job posting system (e.g., Buckeye Careers Network, Hire a Buckeye, FisherConnect, FutureLink)
- Online job search engine (e.g., Monster, Dice, Indeed)
- Recruited
- Social media (e.g., LinkedIn, Facebook, Twitter)
- Other _____

Q1.33 How well do you think Ohio State has prepared you for the job market?

- Very well
- Generally well
- Neither well nor inadequately (neutral)
- Inadequately

- Very inadequately
- Not relevant

Q1.34 How important have university or college resources been in helping you to find a job?

- Not important
- Somewhat important
- Neither important nor unimportant (neutral)
- Very Important
- Essential
- Not applicable

Q1.35 Where will you be employed?

- | | | |
|--------------------------|---------------------|------------------|
| • International location | • Kentucky | • Ohio |
| • Alabama | • Louisiana | • Oklahoma |
| • Alaska | • Maine | • Oregon |
| • American Samoa | • Maryland | • Pennsylvania |
| • Arizona | • Massachusetts | • Puerto Rico |
| • Arkansas | • Michigan | • Rhode Island |
| • California | • Minnesota | • South Carolina |
| • Colorado | • Mississippi | • South Dakota |
| • Connecticut | • Missouri | • Tennessee |
| • Delaware | • Montana | • Texas |
| • District of Columbia | • Nebraska | • Utah |
| • Florida | • Nevada | • Vermont |
| • Georgia | • New Hampshire | • Virginia |
| • Guam | • New jersey | • Virgin Islands |
| • Hawaii | • New Mexico | • Washington |
| • Idaho | • New York | • West Virginia |
| • Illinois | • North Carolina | • Wisconsin |
| • Indiana | • North Dakota | • Wyoming |
| • Iowa | • Northern Marianas | |
| • Kansas | Islands | |

Answer If Where will you be employed? International location Is Selected

Q1.36 You chose "International location;" please let us know the country.

Q1.37 What city will you be employed in? If you are unsure, please leave blank.

Q1.38 Future Education Plans

For the following six cases, which, if any, degrees do you plan to pursue either immediately upon graduation or at any time in the future? Please mark all that apply. If no option applies, please leave blank.

	Immediately upon graduation	Future plans
Law (LLB or JD)	•	•
Medicine (MD)	•	•
Other medical (DO, DDS, DMD, DC, DCM, OD, PharmD, DPM, DP, PodD, DVM, or other)	•	•
Second Bachelor's degree	•	•
Master's degree (MA, MS, MFA, or other)	•	•
Doctorate (PhD, EdD, or other)	•	•

Q1.39 Which of the following graduate or professional school admission test(s) have you taken. Please mark all that apply.

- GRE (Graduate Record Examination)
- LSAT (Law School Admission Test)
- MCAT (Medical College Admission Test)
- GMAT (Graduate Management Admission Test)
- Does not apply
- Other, please specify _____

Q1.40 If you have been accepted to a graduate or professional school and will be attending within the next year please indicate the college or university:

- The Ohio State University
- Does not apply
- Other, please specify: _____

Answer If If you have been accepted to a graduate or professional school and will be attending within the next... The Ohio State University Is Selected Or If you have been accepted to a graduate or professional school and will be attending within the next... Other, please specify: Is Selected

Q1.41 Please indicate the program/ field of study and degree:

Answer If If you have been accepted to a graduate or professional school and will be attending within the next... The Ohio State University Is Selected Or If you have been accepted to a graduate or professional school and will be attending within the next... Other, please specify: Is Selected

Q1.42 Please provide the location of the college or university (city, state, country):

Q1.43 To what extent have your overall undergraduate experiences influenced your future plans for graduate or professional studies?

- Very positively
- Generally positively
- Neither positively nor negatively (neutral)
- Generally negatively
- Very negatively
- Not relevant

Q1.44 Curricular Experiences

Please answer the following questions based on all your coursework experiences since you began your education at Ohio State. To answer, select a number in which 5 indicates “A great extent” and 1 indicates “Not at all.” If the question does not apply, select “Not applicable (N/A).”

Q1.45 To what extent have you gained knowledge about key areas of study (for example, the arts, the sciences, your major), including how they are related to one another?

- 5-A great extent
- 4
- 3
- 2
- 1-Not at all
- 0-N/A
- Q1.46 To what extent have you gained skills needed to:

	5-Great Extent	4	3	2	1-Not at all	0-N/A
Acquire, comprehend, and evaluate information and arguments						
Communicate clearly, precisely, and effectively						
Analyze and assess using qualitative and quantitative methods						
Integrate, create, and apply knowledge						

Q1.47 To what extent have you gained perspectives needed to:

	5-Great Extent	4	3	2	1-Not at all	0-N/A
Interpret past and contemporary world cultures, events, and issues						
Make discriminating aesthetic judgments						
Make considered and reasoned ethical judgments						
Understand the roles of science and technology						
Recognize and respect diversity						

Q1.48 You have taken coursework in general education as well as more specialized programs of study, such as your major(s). Please answer the following questions based on your coursework experiences since you began your education at Ohio State.

Q1.49 To what extent, through your major(s), minor(s), and other specialized study programs, have you gained in-depth knowledge, skills, perspectives, and ways of thinking related to your specialized field(s) of study?

- 5-Great Extent
- 4
- 3
- 2
- 1-Not at all
- 0-N/A

Q1.50 To what extent, through your General Education program, have you gained a breadth of knowledge, skills, and perspectives that cross disciplines?

- 5-Great Extent
- 4
- 3
- 2
- 1-Not at all
- 0-N/A

Q1.51 General Education

Please answer the following questions based on your General Education coursework experiences since you began your education at Ohio State. To answer, select a number in which 5 indicates “A great extent” and 1 indicates “Not at all.” If the question does not apply, select “Not applicable.”

Q1.52 To what extent have your knowledge, skills, and perspectives improved in the following areas, each of which reflects a General Education category or topic in which you may have been required to take coursework.

	5-A great extent	4	3	2	1-Not at all	0-N/A
Written communication						
Oral expression						
Foreign language						
Literature						
The arts						
Historical perspectives						
Social diversity in the United States						
Global studies						
Social science						
Natural science (biological and physical)						
Logical analysis and analytical reasoning						
Mathematical and quantitative skills						

Q1.53 To what extent have your knowledge, skills, and perspectives improved through the following kinds of coursework, each of which is a General Education option in which you may have taken coursework.

	5-A great extent	4	3	2	1-Not at all	0-N/A
Education abroad courses or programs						
Service learning courses						
Culture and ideas coursework						
Cross-disciplinary seminars						

Q1.54 While enrolled in your current degree program, did you complete an internship, job shadow, co-op, practicum, or academic major-related work experience?

- Yes
- No

Answer If Which of the following best describes your current state of plans for employment immediately after g... Have accepted a position Is Selected And While enrolled in your current degree program, did you complete an internship, job shadow, co-op,... Yes Is Selected

Q793 Earlier you indicated you had accepted a job offer. Is your accepted position with the same organization where you completed your internship, job shadow, co-op, practicum, or academic-major related work experience?

- Yes (1)
- No (2)

Q1.55 During your time as a student at Ohio State, did you do any of the following? Please select all that apply.

- Took one or more courses related to entrepreneurship or innovation
- Completed the official Entrepreneurship Minor
- Participated in a co-curricular/ extracurricular activity related to entrepreneurship
- Participated in or joined one of the student clubs/ organizations related to entrepreneurship
- Assisted with or launched a company or business (for-profit or non-profit) that is still active
- Assisted with or launched a company or business (for-profit or non-profit) that is inactive
- Participated in a non-profit or Social Entrepreneurship experience
- Completed an internship in an entrepreneurship related company
- Completed a research activity that involved an invention

Appendix B: Groupings of Answers for Questions Utilized in the Study

Question	Grouping
Race	<ul style="list-style-type: none"> • White • Black or African American • Hispanic • Asian • Non-Resident Alien • Two or More Races • Other- American Indian/Alaskan Native, Native Hawaiian/ Pacific Islander, None Given/Race Unknown
College of Enrollment	<ul style="list-style-type: none"> • UAGR • UASC • UBUS • UEHE • UENG • UNUR • Combined Other- UAHR, UATI, UDHY, UENR, UHRS, UJGS, UPBH, UPHR, USWK
Q1.14- Looking back, how satisfied are you with your experience as a student at Ohio State overall?	<ul style="list-style-type: none"> • Satisfied • Somewhat Satisfied • Neither satisfied nor dissatisfied; Somewhat dissatisfied, Dissatisfied
Q1.15- At the time you graduate, approximately what will be the total amount borrowed to finance your undergraduate education that you are personally responsible for repaying?	<ul style="list-style-type: none"> • \$40,000 or more • \$20,000 to \$39,999 • \$1 to \$19,999 • None; Unable to estimate
Q1.16 Reflecting back, do you now think that the benefits you have received from attending Ohio State were worth the financial costs to you and your family?	<ul style="list-style-type: none"> • Strongly agree • Somewhat agree • Neither agree nor disagree (neutral); Somewhat disagree; Strongly disagree
Q1.19- What is MOST LIKELY to be your principal activity upon graduation?	<ul style="list-style-type: none"> • Employment, full-time paid; Employment, part-time paid • Graduate or professional school, full-time; Graduate or professional school, part-time; Additional undergraduate

	<p>coursework</p> <ul style="list-style-type: none"> • Military service • Volunteer activity (e.g., Peace Corps) • Starting or raising a family
<p>Q1.30 What will be your starting yearly salary? (In US Dollars, Format: \$25,000)</p> <ul style="list-style-type: none"> • Computed salary quartiles based on information provided 	<ul style="list-style-type: none"> • Salary 1: \$0-\$30,000 • Salary 2: \$30,001- \$50,000 • Salary 3: \$50,001- \$60,000 • Salary 4: \$60,000+
<p>Q1.33 How well do you think Ohio State has prepared you for the job market?</p>	<ul style="list-style-type: none"> • Very well • Generally well • Neither well nor inadequately (neutral); Inadequately, Very inadequately; Not relevant